The Terminal

FEAR NOT THE COMMAND LINE

// FLATIRON SCHOOL

LEARNING OBJECTIVES

// Utilize bash commands through a terminal interface

// Use the terminal to list, make, move and remove files and directories

// Use the terminal to navigate between files/directories and open Jupyter notebooks or other files

// Edit text files using vim

Terminal? Shell? Command Line?

- Many terms - all different but similar
    - Ultimately: we use the **Command Line** to enter text prompts and interact with the **Shell** interface, which is run by the **Terminal**
    - Realistically: these terms are often used interchangeably
- In the Flatiron Data Science program, we use:
    - Terminal Programs:
        - Mac - **Terminal** application
        - Windows - **Git Bash**
    - Shell options: **bash** / **zsh**

Basic Commands

```
$ pwd (print working directory)
```

display the current working directory of the shell

```
$ ls (list)
```

list the files and directories of the current directory

```
$ cd (change directory)
```

change the directory to update the current working directory

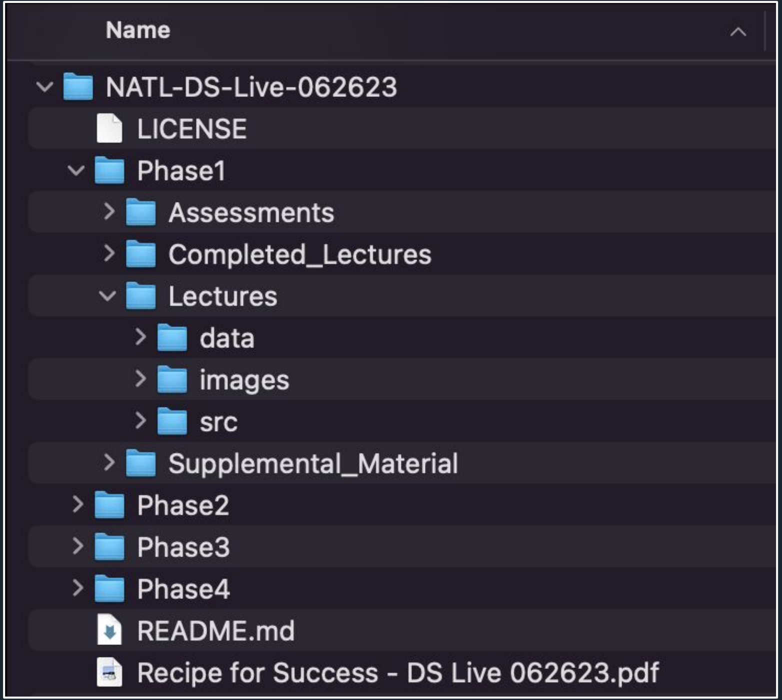
Paths - Absolute or Relative?

- **Absolute:**

  starts from root (/) or home (~)

- **Relative:**

  starts from your current working directory (where you are)



```
Name
NATL-DS-Live-062623
    LICENSE
    Phase1
        Assessments
        Completed_Lectures
        Lectures
            data
            images
            src
        Supplemental_Material
    Phase2
    Phase3
    Phase4
    README.md
    Recipe for Success - DS Live 062623.pdf
```

Prompt:

Given the file directory structure pictured above, what are the two versions of the path to the **Phase4** folder, if you're currently in **Phase1/Lectures/data**?

Special Directories

/ root, the top-level directory

- DO NOT mess around here

~ your home directory

- typically the ‘user’ level

. the current directory

.. the parent directory (one level up)

Basic Commands

```
$ touch
```
create a new file based on extension

```
$ mkdir
```
create a new directory/folder

```
$ mv
```
move a file from source to destination
(also used to rename files/directories)

```
$ rm
```
remove a file from the file system
(BE CAREFUL!)

Prompt: Make Your Flatiron Folder!

- Using only the Terminal, make a Flatiron folder where you can keep all program-related files and materials (if you haven't already)
    - Suggestion: Put it somewhere logical! In Documents or Desktop, perhaps
- Practice opening a new Terminal window and navigating to that folder!

Text Editors

- Nice to use a GUI (graphical user interface) code-focused text editor
  - No matter which you use, configure that text editor so it can open easily from the command line!
  - We will download VS Code - Windows users should already have
  - If you use VS Code:
    - `code .` : open the current working directory
    - `code <FILENAME>` : open that file
    - (Macs: need to set up)
- Sometimes, you have to use a CLI text editor... enter **VIM**

Surviving VIM

Two Modes:

- **Insert** mode
  - Type normally to add/edit text
  - Access by pressing `i`
- **Command** mode
  - Each key is a command
  - Allows to save and exit
  - Enter by pressing `ESC key`

Basic VIM Commands (used in Command mode)

`i`	enter Insert mode
`A`	enter Insert mode at the end of the line
`ESC`	return to Command mode
`dd`	delete the current line
`u`	undo last change
`:wq`	save and quit
`:q!`	force quit without saving

Additional Resources

Initial Learning Resources:

- OpenClassrooms' course on the command line
- MIT's Terminus command line game
- Linux Commands Cheat Sheet

Going Further:

- Unix Primer tutorial: Basic Commands in the Unix Shell
- Data Camp tutorial: 8 Useful Shell Commands for Data Science
- Tips and Tricks: https://www.realdifferencedata.com/2022-03-16-terminal-tips-and-tricks/